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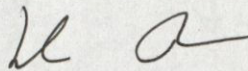
A Flash of Creative Genius: The Effect of Implicit Motives on Inspiration

A thesis submitted in partial fulfillment of the requirement
for the degree of Bachelor of Arts in Psychology from
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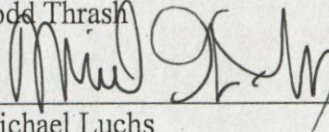
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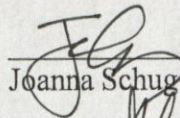
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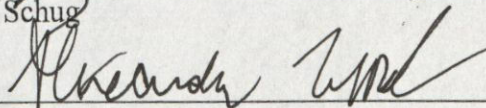
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A Flash of Creative Genius: The Effect of Implicit Motives on Inspiration

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Abstract

There appears to be two types of creative processes reported by writers – one that is effortless and one that is effortful. Evidence suggests that an unconscious mechanism may underlie the passivity of inspired writing. We tested the hypothesis that activation of implicit motives is linked to inspired writing. A sample of college students ($n = 206$) attended lab sessions in which they wrote a “blog entry” on the meaning of life, and reported the extent to which they felt inspired or exerted effort. Participants’ implicit motives were measured using the Picture Story Exercise. Multiple regression analysis shows that inspiration predicts writing about topics consistent with implicit motives, and effort predicts writing about topics inconsistent with implicit motives. Implications of implicit motives on inspired and effortful writings are discussed.

All who have written a paper are aware that there are two parallel universes where creative ideas originate: one from which words flow to the page effortlessly, and another from which words have to be intentionally squeezed, crunched, or searched in vain. Thrash et. al. (2017) proposed that inspiration and effort are two types of motivational processes that underlie these disparities in writing. Inspiration is characterized as a motivated state, and effort as volitional regulation. When motivation is insufficient, volitional regulation is set in motion to compensate for the lack thereof (Kehr, 2004a).

The distinction between the two experiences is best illustrated by writers' and musicians' accounts of their creative process. Gilbert (2009) described that while the American poet Ruth Stone worked in the field, she would experience a bout of inspiration like a thunderous train coming towards her. The train would chase her and compel her to dash into the house and seize the poem with pen and paper before it vanished into thin air, transpiring before she knew it. In a similar fashion, Bart Miller composed the song *I Can Only Imagine* in only 10 minutes. Inspired by the death of his father and his Christian faith, Miller said in an interview that he was “a spectator watching the song being written,” “like a lightning in a bottle,” “there is no way I could have pulled this off” (Songfacts, 2012). *I Can Only Imagine* became the best-selling Christian song of all time, peaking at top 5 on *Billboard Adult Contemporary*, a rare achievement by a Christian rock band. The phenomenon that inspiration is contagious and infectious – that it can spread from creator to audience – was tested by Thrash et. al. (2017). These researchers found that through the medium of text, more inspired writers indirectly elicited inspiration from readers.

The sense of passivity appears to be a hallmark of inspiration. Inspired individuals tend to form sentences that refer to active others (“he”/“she”) and the passive self (“me”) (Thrash &

Elliot, 2004). Ancient writers invoked the Muse for revelation, making themselves passive agents of their own work: in *Iliad* and *Odyssey*, Homer called the Muse to be his teacher and stir him to sing (Minchin, 1995). In *Aeneid*, Virgil begged the Muse to prompt him to tell the love story of Lavinia, Turnus and Aeneas (Todd, 1931). Both Homer and Virgil were considered to be merely scribes, vehicles of expression, and the Muse was awarded the credit for the work.

Dornbach (2003) observed that when writers enter the zone of composition, there is no longer “I”, but rather a foreign voice that dictates laws which the “I” must adhere and surrender to, as if the work invents and *reinvents* its author. The reinvention manifests itself in recurring motifs in literature, music, and films, thus injecting themselves into the mind of multiple authors. For example, the flood narrative appeared in the biblical Genesis, the Epic of Gilgamesh, and in Greek, Hindu, and Chinese mythology (Leeming, 2005); the four-chord progression (I–V–vi–IV) appears repeatedly in western music sung by musicians ranging from the Beatles, Elton John, Taylor Swift, Rhianna, to Lady Gaga. Similar themes reinvent themselves because people enjoy work that brings them a sense of familiarity. Indeed, originality has been found to partially suppress inspiration contagion because “original ideas are regarded as belonging to their author and not their audience” (Thrash et.al., 2017).

Not all creative processes are effortless. When Bob Dylan met with Leonard Cohen, Dylan said that it took him 15 minutes to write *I and I*, whereas Cohen said that it took him three years to write *Hallelujah* (Sager, 2007). When writer Sylvia Plath was concerned with how good or bad her work looked in the eyes of editors, publishers, and critics, she experienced a dry spell; she said that her wish for acceptance, praises, and recognition “ironically freezes me at my work, corrupts my nunnish labor of work-for-itself-as-its-own-reward” (Hughes & McCullough, 1982).

Motive researchers would code her “wish” as explicit needs for achievement and power. The activation of explicit motives seemed to have given her writer’s block.

Why is writing sometimes effortless and sometimes effortful? Bowers (1979) suggested that receptiveness to unconscious work may account for the experience of effortlessness. Similarly, Thrash, Elliot, Maruskin, and Cassidy (2010) posited that when someone is inspired to create, “the seminal idea is experienced as originating in the unconscious; it tends to enter awareness without the individual’s control; and, once in awareness, it exerts a compelling, evocative press on the individual.” Given the link between effortlessness and the unconscious, we hypothesize that implicit motives are the unconscious mechanism behind the experience of inspired writing.

Adopting a Motivational Approach to Inspiration and Effort

In the tradition of motivational psychology, a motive energizes and directs actions like hunger directs people to food. Motives are generally measured in the domains of the Big Three: wanting to do things better (the need for achievement), wanting to establish friendly relationships with people (the need for affiliation), and wanting to have an impact on others (the need for power). McClelland, Koestner, and Weinberger (1989) provided ways to distinguish implicit and explicit motives: implicit motives are inaccessible to introspection, measured indirectly through fantasy story-telling, and develop during early childhood through natural incentives and affective experiences. Explicit motives are defined as self-attributed, measured by self-reports, and are formed after language acquisition through receiving parental and societal instructions on what actions are socially desirable. Implicit motives have been linked to hormone secretions; for example, while watching romantic films, participants with strong implicit motive for affiliation experienced an increase in dopamine release, a hormone associated with pleasure, whereas

participants with strong explicit motive for affiliation did not (McClelland, 1989). Implicit motives are possibly mediated by more primitive mid-brain structure that influences behavior without conscious effort, whereas explicit motives are possibly mediated by regions of the highly developed cerebral cortex which influences behavior with conscious effort.

Implicit Motives

The study of implicit motives was first explored by Henry Murray (1938) who was interested in assessing “the need, desire, intention or direction of striving *within* the subject.” These automatic, covert, and unconscious motives energize, select and determine behaviors, but people are generally not consciously aware of their implicit motives. Even if they are aware of their implicit motives, they may be unwilling to reveal them on questionnaires. In order to bypass participant self-report, Morgan and Murray (1935) designed the Thematic Apperception Test (TAT), in which participants were asked to tell stories about pictures of socially ambiguous situations that arrested their imagination. When absorbed in telling a fantasy story, participants in theory became less conscious of themselves and let down their guard, perceiving their own “wishes, fears and traces of past experience” in the depicted individuals. The stories were then coded for motive imagery.

To establish consistent rules for coding TAT stories, Winter (1994) developed the *Manual for Scoring Motive Imagery in Running Text* based on previous, empirically validated coding systems. Under the instructions of the manual, the need for achievement is coded when participants write about competing, evaluating positively, and contributing innovations, such as winning the Nobel prize or discovering a cure for cancer. The need for affiliation is coded when participants write about friendly relationships, such as two people having a casual conversation, making a marriage proposal, and going on a date, etc. Finally, the need for power is coded when

participants write about having an impact, such as helping someone, one person sabotaging another, gaining fame and recognition, etc. Winter's system has shown good predicative validity and sound psychometric properties when applied in research over the past 40 years (Pang & Schultheiss, 2005).

Explicit Motives

Explicit motives, on the other hand, are directly tapped by self-reports. Participants respond to questionnaires that assess their values, goals, and preferences. Compared to indirect assessments, self-reports are susceptible to social desirability bias in which participants present themselves in the best possible light (Fisher, 1993)

Early researchers in the 1950's did not distinguish implicit and explicit motives, and saw the TAT and questionnaires as two ways to measure the same construct. A puzzle appeared when both the TAT and questionnaires satisfied test-retest reliability, but produced divergent results. Researchers initially reacted to this discrepancy by rejecting one method or the other. As evidence accrued over time, it became clear that the TAT and questionnaire methods assess different types of motives—i.e. implicit and explicit motives.

Implicit motives predict spontaneous actions, and these actions are performed for the pleasure of the activity itself. In contrast, explicit motives predict conscious, deliberate responses that bring socially desirable benefits (McAdams & Constantian, 1983; McClelland, 1985; DeCharms et al., 1955; Biernat, 1989). For example, McAdams and Constantian designed a diary study and beeped participants at random times of the day to ask them to record the activities in which they were engaged. Participants' implicit affiliation motive predicted their actual contacts with others, whereas explicit affiliation motives predicted what participants said when asked whether they preferred contacts with others.

Implicit and Explicit Congruence

The behavioral discrepancies between implicit and explicit motives led early researchers to believe that implicit and explicit motives are completely independent (McClelland, 1987), i.e. the two types of motivated are correlated at $r = .00$. Current scholars call for the retirement of the zero correlation assumption (Thrash, Wadsworth, Sim, Wan, & Everidge, in press), given that although implicit motives are often out of alignment with explicit motives, the correlation between them is not zero. A recent meta-analysis, consistent with past studies, found that implicit and explicit motives are positively, albeit weakly correlated, $r = .13$ (Köllner & Schultheiss, 2014). The consensus remains that, on average, people have highly incongruent implicit and explicit motives. But some are exceptions to the rule: the fact that the correlation between implicit and explicit motives is weakly positive suggests that implicit motives do find their way into consciousness for some individuals. For example, some participants, through observation and introspection, may be aware of their deep-seated desires and exemplify strong motive congruence. When these participants are embedded in a general population that exemplifies motive incongruence, they will bring the correlation between implicit and explicit motives slightly above zero.

Studies have found that motive incongruence is detrimental to one's wellbeing, and is related to negative outcomes such as job burnout and unhealthy eating. Conversely, motive congruence is conducive to well-being, relationship satisfaction and stability, identity achievement, flow, and volitional strength (Thrash et al., in press). Researchers hypothesize that conflicts between the motive systems manifest in frustration, whereas a degree of consistency manifest in ease (Hagemeyer, Neberich, Asendorpf, & Neyer, 2013).

A Dual Process View of the Creative Process

The distinction between the two types of motives is similar to distinctions made by dual process theories. Two-system models for reasoning, judgment, and decision making have gained momentum over the past fifty years, and there are more than a dozen dual process theories that bear different names, but share family resemblances (Stanovich & West, 2000). For example, there is implicit cognition versus explicit cognition (Reber, 1993), intuitive cognition versus analytical cognition (Hammond, 1996), and heuristic processing versus analytic processing (Evans, 1984), etc. Differences in technicalities and details exist, but the main distinctions made by the dual process theories are as follows: system 1 is characterized as effortless, automatic, unconscious, highly contextualized, emotional and personalized, and system 2 is characterized as effortful, controlled, analytic, computational, and emotionally neutral.

Nobel laureate Daniel Kahneman (2011) gave his book the title, *Thinking, Fast and Slow*, which correspond to the fundamental features of system 1 (fast) and system 2 (slow). Richard Thaler (2015), also a Nobel laureate, imagined system 1 and system 2 as two voices that both reside in the head, which he called the doer and the planner; “one could think of the planner as residing in the prefrontal cortex region of the brain, which is associated with conscious, rational thinking, whereas the doer can be associated with the limbic system,” a region known to support emotion, behavior, motivation, and long-term memory.

To use an overly simplified metaphor, one could imagine that inspiration derives (in part) from the limbic system where emotion is raw, and that effort derives from the prefrontal cortex where thoughts are filtered and actions are planned. Together, the “emotive brain” and the “cognitive brain” integrate and create sophisticated responses to environmental stimuli (Mogenson, Jones, & Yim, 1980).

Hypothesis

We hypothesized that there is a link between unconscious, spontaneous inspiration and unconscious, spontaneous implicit motives. In the following study, we test the idea that participants experience inspiration when they write about topics consistent with their implicit motives (i.e. congruence), and experience effort when they write about topics inconsistent with their implicit motives (i.e. incongruence). The alternative hypothesis is that such connections do not exist.

Method

Participants

Two-hundred six participants (89 men, 117 women) were recruited from introductory psychology classes. Participants received research participation credit. Their age ranged from 18 to 70 with a mean of 19.78. Ethnicity was distributed as follows: 10.2% African American, 13.1% Asian, 63.1% Caucasian, 7.3% Hispanic, 1% Native American, and 5.3% other.

Procedure

Before coming to the lab, participants completed a 45-minute online survey. The survey included the Picture Story Exercise (PSE), an updated version of TAT developed by Pang and Schultheiss (2005) to assess implicit motives. During the lab session, participants were asked to write a “blog entry” on what makes life meaningful. They were first asked to come up with an idea for their entry and type a few quick words that capture the main idea for their meaning of life text. Then they were given the Inspiration and Motivation Questionnaire (IMQ) to assess the level of their inspiration and effort. Finally, participants were given 10 minutes to write the blog entry, with central ideas that they previously typed shown on the screen as a reminder.

PSE

Two undergraduate research assistants read all 1,236 PSE stories and provided

independent coding. The research assistants took between one to two semesters to be trained as expert coders using Winter (1994)'s coding manual; both scored above 80% on the assessment test prior to the commencement of coding. Research assistants coded PSE stories individually at first, and then met to compare differences and discuss reasons for disagreements, and finally produced revised coding, which was allowed to differ between coders if disagreements persisted. The average of the two coders' revised coding was used as the final implicit motives scores. Interrater reliabilities for the three content domains were shown in Table 1. Scores were adjusted for total word count across all stories using residualization procedures.

Coding of Meaning Text

Four undergraduate and graduate research assistants read all 204 meaning of life texts (two of the 206 blog questions were left blank), and provided global subjective ratings of how important achievement, affiliation, and power were claimed to make life meaningful by each individual writer. Research assistants used Winter's (1994) definitions of these content domains when deciding whether a given story placed importance on achievement, affiliation, or power.

The coding of meaning texts departed from Winter's manual in one aspect: research assistants did not count the frequency of motive imagery, but rather read the text as a whole and provided an overall subjective judgement. This revision is consistent with the coding of consciously articulated arguments. A 9-point scale was used (e.g., achievement was rated from 1 = *not at all important to the writer*, to 9 = *extremely important to the writer*) to allow for fine distinctions. Descriptive statistics and interrater reliabilities for the three content domains are shown in Table 1.

Table 1
Descriptive statistics (raw score), interrater reliability, and internal consistency

Variable	Mean (raw score)	Standard deviation (raw score)	Interrater reliability (α) / internal consistency	Interrater reliability (α) in revised coding
Implicit need for achievement	1.027	.489	.885	.972
Implicit need for affiliation	.993	.553	.938	.987
Implicit need for power	.973	.552	.852	.974
Meaning text achievement	3.41	1.503	.728	
Meaning text affiliation	5.50	2.051	.886	
Meaning text power	3.90	1.860	.798	
Congruence between implicit motives and meaning texts	.252	.971		
Inspiration	15.471	3.992	.892	
Effort	16.039	3.534	.921	

Table 1. Implicit needs were measured by PSE, and congruence is configural congruence across three content domains.

Congruence

Configural congruence, the similarity of implicit motives and meaning texts across three content domains (Thrash et al., 2010b), was calculated separately for each participant. Configural congruence is hereafter labeled *congruence* for the sake of conciseness. The meaning texts coding used a 9-point scale, different from that of PSE, which is not based on a scale but rather

the frequency of motive imagery, therefore, both PSE and meaning texts data were standardized to have a mean of zero and a variance of one in order to put them in the same metric.

Congruence between implicit motives and meaning texts is a special case of profile similarity. Cohen (1969) posited that the value of r , the measure of similarity between two profiles, varies arbitrarily depending on the direction in which variables are scored. For example, a participant may have an extraversion score of 5, which is the same as an introversion score of 2 on a 7-point scale, but the value r is different depending whether the researcher chooses to add 5 or 2 to the rest of the personality profile. Cohen provided an equation for calculating a correlation coefficient that takes into account both possible directions of scoring, thereby eliminating the problem of arbitrariness. Cohen's r is used in our study to compute the congruence between implicit motive and meaning text profiles. The sampling distribution of r is skewed, so congruence underwent Fisher's r to z transformation to produce a normal distribution.

Inspiration and Motivation Questionnaire (IMQ)

This new instrument was designed to assess the inspiration and motivation related to the formation of ideas, and was used in an intervention to help high school students identify which kinds of goals and strivings bring deep-seated fulfillment (Thrash & Weissgold, 2015).

Confirmatory factor analysis indicated that inspiration may be subdivided into two processes, inspired "by" and inspired "to" (Thrash & Elliot, 2004). The difference between the two is that, for example, one is inspired by the view of Grand Canyon versus one is inspired to compose a symphony after viewing the Grand Canyon. In our study, we chose inspired "to" as the construct of interest, because it corresponds more directly to the writing task. The participants had just generated ideas, and were about to write the blog entry – an act of "to" do – when the IMQ was

given to assess the experience of inspiration and effort. Effort was defined as volitional exertion set in motion after ideas and plans were generated, as opposed to the effort of trying to generate ideas and plans in the first place. Thus the inspired “to” and effort variables concern the same portion of the creative process and are on equal footing. Participants were asked to rate the items from a scale of 1 (*strongly disagree*) to 7 (*strongly agree*), concerning how they felt during the writing task. Inspiration was assessed by three items, i.e. “I feel inspired to write about my idea,” “I feel inspired to act on my ideas right away, while they are still fresh in my mind,” and “I feel inspired to express or give life to my ideas.” Effort was assessed by another three items, i.e., “I will work hard to achieve my plans and ideas,” “I will put a great deal of effort into achieving my plans and ideas,” and “I will fully exert myself to achieve my plans and ideas.” Items were randomized.

Results

A correlation matrix that indicates relationships among variables is provided in Table 2. Inspiration and effort have a strong correlation, $r = .684$, which means they are not perfectly free to vary when both are embedded in a regression equation as independent variables. Although inspiration and effort correlate with congruence in the predicted direction ($r = .078$ and $r = -.051$), these correlations are not significant because of suppression effects. Their significance levels increase when a multiple linear regression is performed on congruence, with both inspiration and effort included as independent variables. The coefficients are provided in Table 3. The regression analysis supports our hypothesis that there is a link between inspiration and writing about topics consistent with one’s implicit motives, as indicated by the positive slope for inspiration. Conversely, effort is associated with writing about topics inconsistent with one’s implicit motives, as indicated by the negative slope for effort.

Interestingly, meaning text achievement and implicit need for achievement were found have a positive relationship, $r = .207$, as were meaning text affiliation and implicit need for affiliation, $r = .241$.

Table 2
Correlation matrix

Variable	1	2	3	4	5	6	7	8
1. Implicit need for achievement								
2. Implicit need for affiliation	.100							
3. Implicit need for power	.144*	-.173*						
4. Meaning text achievement	.207*	.008	-.004					
5. Meaning text affiliation	-.069	.241*	-.103	-.181*				
6. Meaning text power	.059	.059	.088	.260*	.003			
7. Inspiration	.063	.048	-.170*	.035	.159*	.001		
8. Effort	-.038	-.035	-.082	.008	.140*	.009	.684*	
9. Congruence between implicit motives and meaning texts - after r-to-z	-.129	.129	-.063	.069	-.002	-.106	.078	-.051

*denotes significance under 95% CI

Table 3

Multiple linear regression summary table congruence between writer implicit motives and meaning texts as the dependent variable

Predictor	Unstandardized coefficient	Coefficients SE	Standardized coefficient	t	p
Inspiration	.053	.024	.212	2.220	.028
Effort	-.054	.026	-.195	-2.048	.042

Table 3. Inspiration positively predicted congruence, while effort negatively predicted congruence. A marginally significant equation was found ($F(2, 201) = 2.728, p < .068, R^2 = .026$). Controlling for semantic and episodic manipulations does not affect the findings.

Discussion

The documented strong, positive relationship between inspiration and effort suggests that one is more likely to exert effort when one is inspired, consistent with the theorizing that inspiration provides motivational support for effort (Thrash, Moldovan, Oleynick, et al., 2014). When one sees a glimpse of better possibilities, one becomes energized to realize those possibilities and to bring those ideas to fruition, and thus is more motivated without a need for “volitional effort” (Thrash et al., 2017).

The correlational design of our study does not allow causal inferences, so it is possible that the opposite – inspiration is a product of effort – is true. Like the anonymous writer famously said, “I only write when inspiration strikes. Fortunately, it strikes at nine every morning.” Productivity could be the result of unrelenting discipline as well as the result of a

moment of passion. Inspiration and effort are perhaps not from parallel universes, but rather the twin galaxies that spiral and affect each other.

On the other hand, the mechanism behind the passivity of inspiration has never been explained, other than being attributed to the divine intervention of the Muse. We theorize that the reason inspiration reveals itself effortlessly and pushes people toward action like a wind behind the back is because inspiration is associated with the activation of implicit motives. When implicit motives are thematically congruent with explicit motives or goals, no volition regulation is required (Sokolowski, 1993). To the contrary, when motivation is insufficient, volitional regulation, which is effort, has to compensate for the lack thereof or even suppress implicit motives (Kehr, 2004a). The compensatory model of work motivation and volition was corroborated by findings that managers who had incongruent implicit and explicit motives showed depleted volitional strength (Kehr, 2004b). When inspiration propels people to act on their ideas right away, no such volitional regulation is needed.

We also see that effort is related to the deactivation of implicit motives. This could potentially explain the reason why one finds writing college application essays or job cover letters to be particularly dreadful, as one suppresses their implicit motives and opts for content that pleases the admission and hiring committees.

Although implicit motives are generally considered inaccessible to the conscious mind, it is interesting to note that implicit motives were significantly correlated with the sources of meaning that people wrote about in two out of the three content domains (i.e. achievement and affiliation). This finding adds to the call for the retirement of the zero correlation assumption and the assumption that individuals lack insights into their implicit motives (Thrash et al., in press). Despite the large discrepancies between implicit and explicit motives, implicit motives do

influence conscious responses, and this is particularly clear when the right question is posed to participants. It is not surprising that implicit power motives did not correlate significantly with what people claimed to make life meaningful. Power, unlike achievement and affiliation, suffers from negative connotations (one does not want to be “power-hungry” or “controlling”), and tends to be filtered under social desirability bias.

Future Directions

The question of how to become a good writer has a long history in the humanities, and perhaps the holy grail of expressive and academic writing alike is to engage and inspire the audience. How to achieve that effect remains a question. After establishing the link between writer’s implicit motives and inspiration, we may turn our attention to reader’s implicit motives and inspiration. Building on the finding that inspired writers elicited higher levels of inspiration in the readers (Thrash et al., 2017), we may test whether “great minds think alike” – if inspiration contagion is more likely to occur between writers and readers who share similar profiles of implicit motives.

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